

ARTIFICIAL INTELLIGENCE

(CSC 462)

LAB # 2



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Task 1: Merge two list and sort

main.py	Shell
<pre> 1 l1=[] 2 l2=[] 3 n1=int(input("Enter number of elements for list 1:")) 4 for i in range(1,n1+1): 5 e=int(input("Enter element:")) 6 l1.append(e) 7 n2=int(input("Enter number of elements for list 2:")) 8 for i in range(1,n2+1): 9 e=int(input("Enter element:")) 10 l2.append(e) 11 l3=l1+l2 12 l3.sort() 13 print("Sorted list:",l3) </pre>	<pre> Enter number of elements for list 1:4 Enter element:1 Enter element:4 Enter element:3 Enter element:7 Enter number of elements for list 2:5 Enter element:8 Enter element:2 Enter element:5 Enter element:6 Enter element:9 Sorted list: [1, 2, 3, 4, 5, 6, 7, 8, 9] > </pre>

Task 2: Smallest and largest number

main.py	Shell
<pre> 1 l1=[] 2 l2=[] 3 n1=int(input("Enter number of elements for list 1:")) 4 for i in range(1,n1+1): 5 e=int(input("Enter element:")) 6 l1.append(e) 7 n2=int(input("Enter number of elements for list 2:")) 8 for i in range(1,n2+1): 9 e=int(input("Enter element:")) 10 l2.append(e) 11 l3=l1+l2 12 l3.sort() 13 print("Sorted list:",l3) 14 print("Smallest element:",min(l3)) 15 print("Largest element:",max(l3)) </pre>	<pre> Enter number of elements for list 1:3 Enter element:2 Enter element:5 Enter element:3 Enter number of elements for list 2:4 Enter element:6 Enter element:1 Enter element:4 Enter element:7 Sorted list: [1, 2, 3, 4, 5, 6, 7] Smallest element: 1 Largest element: 7 > </pre>

Task 3: Derivative

main.py	Shell
<pre> 1 from math import sin,cos,pi 2 h=0.001 3 xlist=[i+h for i in range (int(-pi),int(pi))] 4 for i in xlist: 5 dev=(sin(i+h)-sin(i))/h 6 cos_x=cos(i) 7 print('f(x)={}',{i},'f(x)={}',{dev},'cos(x)={}',{cos_x}) 8 if abs(dev-cos_x)<h: 9 print("It is close to cos(x)") 10 else: 11 print("It is not close to cos(x)") 12 13 </pre>	<pre> f(x)= {-2.999} f(x)= {-0.9897796616854526} cos(x)= {-0.9898508816196986} It is close to cos(x) f(x)= {-1.999} f(x)= {-0.4147824054706595} cos(x)= {-0.41523733119846545} It is close to cos(x) f(x)= {-0.999} f(x)= {0.5415638814669776} cos(x)= {0.5411435065615721} It is close to cos(x) f(x)= {0.001} f(x)= {0.9999988333335915} cos(x)= {0.9999995000000417} It is close to cos(x) f(x)= {1.001} f(x)= {0.5390394695642398} cos(x)= {0.5394605648724466} It is close to cos(x) f(x)= {2.001} f(x)= {-0.4175102966144095} cos(x)= {-0.41705592574901745} It is close to cos(x) > </pre>

Task 4: Birthdays

main.py	Shell
<pre> 1 birthdays={"Muaaz":"19-04-2004", 2 "Musab":"22-12-2001", 3 "Mubiz":"03-03-2007"} 4 print("Birthdays in dictionary:") 5 for n in birthdays.keys(): 6 print(n) 7 name=input("Enter a name:") 8 if name in birthdays: 9 bd=birthdays[name] 10 print(name,"'s Birthday:",bd) 11 else: 12 print("Not in record") </pre>	<pre> Birthdays in dictionary: Muaaz Musab Mubiz Enter a name:Muaaz Muaaz 's Birthday: 19-04-2004 > </pre>

Task 5: Dictionary

main.py	Shell
<pre> 1 dict={"name": "Kelly", 2 "age": 25, 3 "salary": 8000, 4 "city": "New york"} 5 keys={"name","salary"} 6 req_dict={key:dict[key] for key in keys if key in dict} 7 print(req_dict) </pre>	<pre> {'salary': 8000, 'name': 'Kelly'} > </pre>